



## ENVIRONMENTAL DEFENSE FUND

finding the ways that work

September 4, 2009

VIA EMAIL: [eaac@calepa.ca.gov](mailto:eaac@calepa.ca.gov)  
Economic and Allocation Advisory Committee (EAAC)  
California Environmental Protection Agency  
1001 "I" St  
Sacramento, CA 95812 EAAC

Subject: Allowance Allocation for California's Cap and Trade Program

Dear EAAC Member,

Thank you for participating in the Economic and Allocation Advisory Committee. This letter describes Environmental Defense Fund views on allowance allocation in greenhouse gas cap and trade programs. Four sections (a) detail our priorities for state, regional, national and international climate policy as they relate to allowance value allocation, (b) identify practical considerations about the difference between allocating allowances and distributing allowance value, (c) summarize the allowance allocation scheme proposed in federal legislation, and (d) discuss questions put before EAAC at the initial meeting on the July 1<sup>st</sup>.

Environmental Defense Fund agrees with the majority of environmental organizations that the value of allowances ought to be used to further the public good and, in the case of California, that public good is articulated in the goals of the Global Warming Solutions Act (AB32). This memo uses the terms "value of allowances" and "allowance value" to refer to the total market value of allowances roughly in the range of \$5 billion annually<sup>1</sup>. Allowance value distribution can include the direct distribution of allowances to commercial interests that will have compliance obligations in AB32 cap and trade, allowance auctions, and setting aside allowances for use in a variety of ways, such as quelling allowance price spikes in unusual circumstances and crediting efforts that further the goals of AB32. In this respect, the "value of allowances" refers to both the allowances and the revenues they may generate through auctions or other sales. Though total compliance cost theoretically is not determined by the choice of allowance value allocation, there is a practical difference between allowances and allowance value, as discussed in Section 2, particularly with respect to equity implications, transactions costs and administration costs. These equity dimensions merit serious attention, and reveal the need to balance near-term financial assistance during a transition period, and a long-term goal of using auctions as the primary means of distributing allowances.

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<sup>1</sup> The California cap and trade program will encompass 85% of emissions in 2020, about 340 mmtCO<sub>2</sub>e (= 0.8 x 427 mmtCO<sub>2</sub>e). At \$10/ton, the total market value of allowances is \$3.4 billion. At \$20/ton, the market is worth \$6.8 billion.

## **1. Climate Policy Priorities**

Environmental Defense Fund has several priorities for designing California's AB32 program. First and foremost is securing environmental performance through an airtight cap on greenhouse gas emissions. Environmental performance should be achieved while helping regulated entities to manage the cost of transitioning toward productive economic activities that incorporate the external costs of emissions into business financial models. In so doing, it is also important to avoid creating competitive disadvantages for California companies competing in worldwide markets. Environmental Defense Fund believes that regulated entities, and other commercial interests, should be given flexibility to take actions that achieve environmental goals at lowest feasible cost.

Priorities for commercial interests should be considered along with priorities of maintaining consumer and political support for climate policy and helping the most vulnerable members of our society to prepare for the regressive economic effects of pricing greenhouse gas emissions. We can, and must, seek to achieve the goals of AB32 in a manner that supports California's broad economic, environmental and social justice goals.

Priorities for national climate policy are in lock step with our California focus, but they also include embracing early actions and smooth linkage to existing programs both within the U.S. (e.g., California's AB32, Western Climate Initiative) and abroad (e.g., EU-ETS).

Environmental Defense Fund has several priorities pertaining to international climate policy, notably the United States joining with the rest of the world in an aggressive international treaty. In lieu of or in advance of an inclusive international climate regime, there is need for clear, interim priorities that enable countries with quickly growing economies and/or rapidly changing ecosystems to be embraced as part of the solution. Climate policy in California and the U.S. can use offsets to inspire reductions in other nations. Doing so, however, is predicated upon the availability of high quality offsets, bilateral agreements that ensure environmental integrity of the AB32 emissions cap, and putting international emissions on course to be part of cap commitments. Environmental Defense Fund has submitted several letters to CARB about offsets; the most relevant letter is attached as an appendix to this letter. A second appendix is a letter we co-authored with British Petroleum, PG&E, and The Nature Conservancy a letter about the benefits of offsets.

## **2. Efficiency and Equity Implications of Allowance Value Distribution**

The EAAC has been asked to consider the efficiency implications of allowance allocation alternatives. While there is little difference, theoretically, between allocating allowances or allowance value, there are important practical differences. The opportunity cost of allowances is identical regardless if seen as payable debts or anticipated receipts, so other than "income effects" the overall cost of meeting reductions goals should not be affected by allocation method. This follows on the logic that economic actors have identical, consistent willingness to pay or be paid,

and are thus indifferent between the two. In fact, research has shown a considerable difference, often described as the "endowment effect", between willingness to pay and willingness to accept.<sup>2</sup>

From an institutional perspective, the difference between allocating allowances and allocating allowance value is even more significant. Auctions locate the point of decision-making about how to spend allowance value with regulating agency in control of auction revenues, whereas administrative distribution of allowances relocates decision authority to regulated agencies. From the perspective of the regulated entity, receiving allowances administratively provides more decision options than do auctions. Also, endowment effects and transactions costs mean that regulated entities receiving allowances via administrative allocation will be less likely to part with them. Free allowance allocation can come to be viewed as an entitlement. Once commercial interests secure an allowance entitlement they are more likely to want to retain the associated regulatory construct.

From the perspective of transactional costs, again, there are practical differences between allowances and allowance value. Notably, they involve very different steps – transactions – in using the value of allowances to further the public good.

Regulators might decide to direct allowance value toward investments other than utility rate payer support or other financing structures to aid low-income households. Allowance value might, for example, be directed toward research and development of low-carbon energy technologies. When allowances are allocated administratively, edicts to allowance recipients will necessarily be constrained by recipient capacities and expertise. For example, while it may be appropriate to require utility sector allowance disbursements to translate into rate payer relief and clean energy R&D, different expectations may be ascribed to petroleum refiners and other heavy industry.

There are other important differences as well, notably the implications for regulated entities' income statement. Requiring allowance purchase through auction without returning auction revenues to regulated entities will extract capital from the same commercial interests that we expect to evolve and innovate. Regulated entities generally support the idea that auction revenues should be returned back to auction participants so as to ease their transition to lower emissions production, and to help to fund their clean technology investments.

These observations lead to two summary points:

1. Due to the endowment effect and transactions costs associated with the alternatives, there are efficiency benefits from auctioning allowances since regulated entities generally will buy only allowances that make economic sense to hold. Comparatively, entities may wish to hold allowances received by administrative allocation even if the rational economic action would be to sell.

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<sup>2</sup> For example, see discussion starting page 176 (about contingent valuation methods) in Hackett, S. (2006) *Environmental and Natural Resource Economics*, 3rd Edition. New York: Sharpe. In addition to endowment effects, there are cognitive and methodology reasons why experimental studies of willingness to pay or to accept differ when they should, in theory, be identical.

2. Transactions and administration cost considerations indicate that some allowances could be given to entities that are best positioned to deliver benefits to low-income consumers, such as electrical load distribution companies or firms positioned to invest in cost-effective efficiency upgrades. On the other hand, regulating agencies are inherently better at ensuring that allowance value be used for consumer protection and benefits. A hybrid of the two seems ideal, and this perhaps explains why the USCAP Blueprint and the federal bill, HR2454, suggest hybrid approaches.

Ideas about how to use allowances, or allowance value, for the public good include more than helping low and middle income electricity rate payers. The AB32 Economic Technology Advancement Advisory Committee Final Report starting at Chapter 9, page 4, suggested the following uses of allowance value:

1. Direct investment in and purchase of additional GHG emissions reductions to support the development and deployment of low-carbon technologies.
2. Allocate funds to California universities, colleges, research facilities for RD&D dedicated to technologies with potentially high GHG emission reduction value.
3. Create financial vehicles and/or programs that address specific gaps, imperfections, or opportunities in low carbon technologies to catalyze both private and public investment.
4. Take advantage of Environmental Justice co-benefits and GHG emission reductions in disadvantaged communities. Co-benefits from emission reduction projects, such as improvements in regional air quality in disadvantaged communities, are important state objectives under AB 32 and should be considered when evaluating overall GHG emission reduction strategies.

Also, ETAAC notes that any "extra" allowance revenues could be used for tax rebates or direct payments to electricity customers, as well as "to make the California economy more equitable, in particular by assisting communities or industries that are disproportionately affected by climate change or by climate change mitigation." Wisely, the ETAAC report cautions against economic aid that mutes the economic incentives created by putting a price on greenhouse gas emissions, such as discounted electricity rates for low and medium income homes.

Despite our collective wisdom, we still routinely provide rate discounts to low-income ratepayers. This well-motivated but incorrectly structured strategy mutes the signal associated with putting a price on greenhouse gas emissions and can inspire more electricity use. This "take back" effect will undermine the both greenhouse gas emissions reductions, and co-pollutant reductions from power plants that tend to burden environmental justice communities disproportionately. A more effective means of assisting low-income electricity rate payers would be providing rebates or directly investing in building and appliance efficiency. However, there may be a tradeoff between efficiency and autonomy; whereas centralized programs can be more efficient, community residents and business operators should retain the authority to make their own decisions. A well designed policy will both inspire and empower our communities to take actions that improve local economies and environments.

### 3. Allowance Allocation in the American Clean Energy and Security Act

EDF Director of Economic Policy & Analysis, Nathaniel Koehane, has given testimony to congress on several occasions, most recently on June 9<sup>th</sup>, 2009, to the Subcommittee on Energy and Environment, Committee on Energy and Commerce, U.S. House of Representative on the allocations in the proposed Waxman-Markey bill (the American Clean Energy and Security Act – also known as H.R.2454), passed in the House of Representatives this past Friday, June 26. His testimony explains EDF views on allowance allocation principles and our interpretation of the current provisions of HR 2454.

EDF believes HR 2454 performs well on each of five principles for allowance allocation:

1. Substantial portion should go toward helping low-income energy customers.
2. Preserve and strengthen American businesses' competitiveness internationally.
3. Equitable distribution that respects differences amongst states and regions.
4. Program credibility and integrity by ensuring that consumers receive the value of allowances, and by avoiding distributions that result in windfall profits.
5. Use allowance value to advance the objectives of the legislation, such as clean energy innovation, developing carbon capture and storage, investing in renewable energy and energy efficiency, and adaptation.

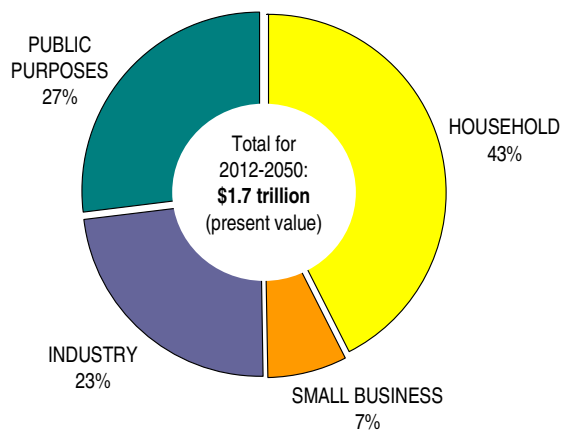
The following bullets summarize our interpretation of the Waxman-Markey bill:

- To protect energy consumers from higher costs, nearly half (43%) of the allowance value will go directly to households in the form of tax rebates or lowered utility bills. Low-income and medium-income households will receive 15% of allowance value, which is what the Center for Budget and Policy Priorities estimates<sup>3</sup> is needed to fully offset higher energy costs in low income households and a portion of the medium income households.
- Energy-intensive, trade-exposed industries will receive 12% of the value of allowances from 2012 through 2030.
- Toward an equitable balance of regional differences, half of the allowances that are given to utilities will be distributed based on carbon dioxide emissions, and the remaining half on an electricity-generation (i.e., output) basis. Also, the combination of tax rebates and direct utility bill supports for households will contribute to regional equity.
- Finally, about one quarter (27%) of the value of allowances will be used to further the broader objectives of the bill, such as transitioning to a clean energy economy, by investing in renewable electricity generation, energy efficiency, carbon capture and storage, and other clean energy innovations.

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<sup>3</sup> <http://www.cbpp.org/files/5-20-09climate.pdf>

Figure 1: Allocation of Cumulative Allowance Value Under ACES



The true test of any emissions allowance allocation method is how it impacts the budgets of American households. The Congressional Budget Office (CBO) and the Environmental Protection Agency both analyzed HR 2454. Taken together, these two studies represent the most credible analyses available of the economic impacts of this legislation. The EPA study is a comprehensive macroeconomic analysis of the costs of reducing carbon emissions over the entire duration of the program, from 2012 through 2050. The CBO study, meanwhile, is a more focused analysis of the potential impacts in the year 2020, based on detailed data on current production and consumption patterns in the U.S. economy. **EPA and CBO both estimate the economic impact on households is likely to be small.** Notable findings including:

- CBO estimates that the cost to the average household in the year 2020 will be just \$175 — less than fifty cents a day per household.
- Because of provisions designed to protect low- to moderate-income families, the impacts are even smaller at the low end of the income scale. CBO estimates that the poorest one-fifth of U.S. households would see a *benefit* of \$40 a year through tax refunds and assistance with utility bills. The next fifth of households, meanwhile, would pay just \$40.
- EPA's analysis, using more dynamic models of the economy, estimates even lower costs than the CBO study. EPA estimates that the average cost to households in the year 2015 will be just \$21 to \$70.
- Over the entire span of the bill, EPA's estimated average annual cost is just \$80 to \$111 per household, in present value. That is just 22 to 30 cents a day for the average American family — less than the cost of a postage stamp.
- On a per-person basis, EPA's estimated average annual cost amounts to only 9 to 12 cents — about a dime a day.

These estimates include the entire net costs to households of the program, taking into account higher prices for fossil fuels as well as savings from energy efficiency and the hundreds of billions of dollars (in present value) that the legislation returns to households over the program.

#### 4. Allocation Questions for Economic and Allocation Advisory Committee

CARB has developed two stages of questions for the members of EAAC to consider. The first stage questions will bring EAAC members to a common point of understanding about options for allocating allowances.

##### Questions for July 1, 2009 meeting of Economic and Allocation Advisory Committee

##### First stage: developing frameworks for addressing economic and allocation issues

- *What determines allowance value for various sectors and facilities in given sectors?*

The value of an allowance can be observed in the marketplace as the current (or anticipated) trading price of allowances, or can be seen as the marginal cost of emissions abatement for economic sectors and individual firms within each sector. To the extent that the trading price is lower than individual firm abatement costs, then it will pay to purchase allowances rather than achieve reductions *in situ*. Thus, the firms that can reduce emissions at costs lower than prevailing allowance prices, will become allowance sellers. Firms with higher abatement costs will be buyers. But it is the marketplace that ultimately determines the value of an allowance through the equilibrating mechanism of the balance between supply and demand for allowances.

- *What are the alternative potential approaches to allowance allocation?*

Allowances may be distributed via an auction, or administratively distributed. Administrative distribution can be based on historic or current emissions or outputs, or based on performance benchmarks. Currently proposed federal climate legislation starts with a relatively small portion of allowances to be sold at auction (about 13%), and administratively allocates the remainder of the allowances. One of the challenges of allocating allowances administratively based on historic output or emissions is that it provides no allowances to new commercial interests entering the marketplace.

While distributing allowances through auctions provides strong incentives for both early actions that achieve reductions and for inspiring innovation within capped sectors, there is great potential to achieve both equity and efficiency goals through free allocation as well. For example, administrative allocation to local energy distribution companies with requirements for lowering rates and investing in energy efficiency can reduce the small regressive economic impacts of the climate policy.

Anticipation of administrative allocation can create perverse incentives, too. For example, if allowances are expected to be allocated based on prior or current emissions, it creates a disincentive for early actions that reduce emissions.

- *What are the alternatives for use of auction revenues (if any)?*

While the Waxman-Markey bill provides a long list of worthy recipients of auction value, the list is not endless and clearly should have priorities. As listed in Section 2, above, the AB32

Economic Technology Advancement Advisory Committee also provides a list of allowance value spending priorities (but stops short of establishing priorities within the list).

- *What are relevant criteria for determining how allowances might be allocated?*

There are many important criteria to consider, including engendering investments and R&D that lead the transition to a clean energy economy, and offsetting the regressive effects of emissions pricing policy. Environmental Defense Fund's five criteria are listed in the first section. While there are many worthy investments, there is little guidance available about setting priorities. For example, the ETAAC report is essentially silent on the issue of setting priorities.

- *What are the efficiency implications of alternative allocation methods? How does allowance allocation affect the overall cost of meeting the AB 32 targets?*

The costs of meeting AB32 goals should not be influenced by allowance allocation method. This conclusion assumes that administrative allocation of allowances will not result in windfall profits and that auctioning allowances will not create competitiveness challenges for energy-intensive, trade-exposed industries. The primary rationale for this conclusion is that firms holding allowances or faced with purchasing allowances via auction will, more or less, treat both scenarios equally because allowances represent opportunity costs. Depending on program design, transactions costs, as well as administrative efficiency, might result in practical differences between administrative and auction-based allocation in terms of the overall costs of meeting program goals.

Full auctioning, or anticipation of such auctioning, might inspire early actions that ultimately lower the cost of meeting AB32 goals. On the other hand, these early actions might also raise the overall cost by, for example, locking in technologies or practices. For this reason, early action policy ought to be inspirational, but not overly generous.

When allocating allowances, there are three pools to consider:

1. administrative allocation to entities with regulatory compliance obligations,
2. auctions, and
3. set asides or carve-outs.

Administrative allocation and auction has received extensive treatment in this memo already.

Allowances can be "set aside" for several strategic purposes, including:

- Crediting early actions that achieve real, verified reductions prior to the commencement of a compliance cap and trade program,
- Buffering the supply of tradable allowances to manage price volatility in unusual circumstances
- Retirement to credit renewable power projects,
- Crediting community-scale actions by individual households and small businesses,
- Actions of local and regional jurisdictions, such as land use planning to sequester greenhouse gas emissions or municipal energy efficiency and waste-to-energy programs.

Any reductions credited with allowances from a set aside pool must be verified (with rigor akin to offsets) as real, permanent, enforceable and additional, but cannot in all instances be classified

as offsets because they may be within capped sectors. To avoid double counting and ownership confusion, allowances can be set aside to be credited to verified actions.

AB 32 requires that investments be directed towards environmental justice communities. Pooling emissions for carbon market crediting links the services of community benefits organizations with the financial investments inspired by capping emissions. Environmental Defense Fund is interested in community aggregation to allow homes and businesses in environmental justice communities to aggregate their emission reductions and then participate in carbon markets, either directly or indirectly through proxy.<sup>4</sup> Participation in the carbon market will allow communities to benefit economically while reducing their emissions, creating a positive feedback loop that will maximize investment.

Through Environmental Defense Fund's Climate for Community project, in collaboration with San Francisco Community Power, we are piloting and examining the economic and technical feasibility of aggregating community level reductions. Demonstrations of this concept are already being performed in California. Similar concepts are being adopted by local air districts<sup>7</sup> and planning departments to mitigate greenhouse gases from new development and industrial expansion. Similar concepts are allowed in the RGGI and EU-ETS programs, but they are not called aggregation. Rather, the RGGI Model Rules allows for offsets to be generated by improving overall building energy performance, or by improving the efficiency of building HVAC systems beyond benchmarks.<sup>5</sup> The EU-ETS allows for these types of reductions as "non-ETS offsets".<sup>6</sup>

- *How are the impacts affected by policy efforts at the regional level (e.g., the WCI) and federal level?*

Leakage due to AB32 is a real concern, but it can be mitigated, in part, by the administrative allocation of allowances or by using other methods to maintain a level playing field. Leakage concerns are lessened as neighboring economies, be them states, regions or other countries, also price on greenhouse gas emissions. In this respect, the WCI and federal programs will help to level the playing fields in North America.

In a second letter this Fall, after other AB32 cap and trade program elements are in greater details, Environmental Defense Fund anticipates a second letter that revisits our replies to the first set of questions, as needed, and provides commentary on the second "stage" of questions posed to EAAC members:

- *In quantitative terms, what are the efficiency and distributional implications of alternative allowance allocations and alternative uses of allowance revenue?*
- *What are the impacts of these alternative allocations or revenue uses on various consumer and business groups? How do these alternatives fare in terms of equity or justice?*
- *What are the strengths and weaknesses of each alternative?*
- *What particular allocation is preferred? To what purposes should allowance revenue be applied?*

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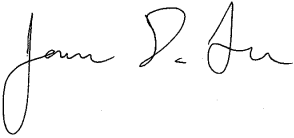
<sup>4</sup> For more information about Environmental Defense Fund's community aggregation piloting work, go to [www.edf.org/C4C](http://www.edf.org/C4C).

<sup>5</sup> See RGGI Model Rule, December 31, 2008, starting page 112.

<sup>6</sup> See Joint Implementation Quarterly, July 2009, Vol. 15 - No. 2, *Groningen, the Netherlands*.

While Environmental Defense Fund supports full auctioning of allowances for AB32 cap and trade, we recognize that the program may need to be designed to transition slowly to auctioning the majority of allowances. Rate-regulated utilities and other energy-intensive, trade-exposed industries (such as cement manufacturing) face unique concerns that may warrant some administrative allocation of allowances as we transition toward a low-carbon economy. Thank you for considering our comments.

Sincerely,

A handwritten signature in black ink, appearing to read "James D. Fine". The signature is fluid and cursive, with the first name "James" written in a larger, more prominent script than the last name "Fine".

James Fine, Ph.D.

Economist, Environmental Defense Fund

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(916) 492 - 4698

Attachment 1 of 2: EDF Comment on limiting offsets in AB32 cap and trade, April 30, 2009,

April 30, 2009

VIA E-MAIL: [baguila@arb.ca.gov](mailto:baguila@arb.ca.gov)

Brieanne Aguila

California Air Resources Board

1001 "I" Street, Sacramento, CA 95812

**Re: Offsets Limits in AB32 Cap and Trade Program**

Dear Ms. Aguila,

Please accept this letter in response to a March 23, 2009 request for comments about enforcing a quantitative limit on offsets within the AB32 cap-and-trade program. Environmental Defense Fund thanks CARB staff for requesting input on these and other important questions, and we look forward to the public discussion which will follow.

As context for our overall comments, we will begin with a discussion of the general role of offsets in a robust, multi-sector cap-and-trade program. Our comments are drawn from our experience with cap-and-trade program design elsewhere, our participation in CARB's Market Advisory Committee (MAC)<sup>7</sup>, and our leadership role in the U.S. Climate Action Partnership (USCAP)<sup>8</sup> that culminated in a "Blueprint" for a national cap-and-trade climate policy representing the consensus of a coalition of business and environmental leaders. Combined, the USCAP and MAC recommendations coalesce into a set of criteria that we use to guide our recommendations. An effective cap-and-trade market must:

- Ensure the integrity of the emissions cap
- Engender public confidence in the program
- Be designed to be simple and transparent
- Achieve cost-efficiency
- Minimize potential for market manipulation
- Ensure the environmental integrity of offsets quality
- Allow for linkage to other programs
- Provide incentives to invest in reductions in non-capped sectors

Using these criteria, the following table summarizes our responses to CARB's questions:

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<sup>7</sup> Market Advisory Committee. Recommendations for Designing a Greenhouse Gas Cap-and-Trade System for California. June 30, 2007. Page V, "Emission reductions by sources not included in the cap-and-trade program (called "offsets") can be used to reduce costs, increase flexibility, and assist in meeting the 2020 emissions-reduction requirement."

<sup>8</sup> US Climate Action Partnership. A Blueprint For Legislative Action: Consensus Recommendations for U.S. Climate Protection Legislation, January 2009, page 9, "Economic modeling and experience in other markets indicates that less restrictive limits on the use of offsets for compliance will tend to result in lower allowance prices, while more stringent emission targets tend to result in higher allowance prices. Since USCAP is recommending a stringent emission target, we also recommend generous limits on the use of offsets to help moderate compliance costs, especially during the period when low carbon technologies are still achieving the economies of scale and commercial maturity that many currently lack."

<b>CARB Question</b>	<b>EDF Response</b>
Interpretation of "49% of reductions" language?	<ul style="list-style-type: none"> <li>• Encourage an interpretation of the 49% limit in a manner that broadly allows offsets into the AB32 cap-and-trade program.</li> <li>• Due to inherent uncertainties, do not define "reductions" in terms of non-AB32 business-as-usual emissions.</li> <li>• Consider evaluating the limit as the difference between the cap at the beginning and the end of each compliance period, but also consider allowing entities to use offsets to meet 49% of the emissions reductions compounded across all prior compliance periods starting in 2012.</li> </ul>
Should the limit be applied to usage, supply, or a hybrid of both? Are there other options?	<ul style="list-style-type: none"> <li>• Base the limit on usage, but consider that both usage and supply limits will undermine investment in offsets projects and potentially result in market perturbation or perverse incentives.</li> </ul>
How is the limit applied across jurisdictions in WCI?	<ul style="list-style-type: none"> <li>• Send a clear message to offsets providers that high quality credits are important, in demand, and welcomed.</li> <li>• Design offset policy with an expectation of linking it to other programs within the WCI and elsewhere.</li> <li>• Work with WCI to create a unified offsets program, focused on rigorous qualitative criteria and allowing for broad use of offsets throughout the region.</li> <li>• It is imperative that offset quality criteria be consistent across WCI jurisdictions.</li> <li>• Non-uniform offset policy within WCI will increase potential for political conflicts and "shuffling" of emissions or offsets credits.</li> </ul>
How is the limit divided among compliance periods? Is it more critical to have a greater supply of offsets early or later in the program?	<ul style="list-style-type: none"> <li>• Offsets may be an important cost containment tool in both the near term and in the future as stringency of the cap increases.</li> <li>• Offsets should be a bridge tool that generates needed reductions while setting the stage for broader inclusion of sources under the cap.</li> <li>• Following MAC recommendations, any quantitative or geographic limits on offsets should be made with "a view to gradual relaxation or removal [of these constraints] once other policy considerations have been adequately addressed."</li> <li>• To facilitate enforcement, equity and transparency, consider making offset policy adjustments for all overlapping compliance periods at the same time.</li> </ul>

## 1. The General Role for Offsets

Independent of each other and in agreement with many scholars, both the USCAP and the MAC acknowledge the important role that offsets will serve in smoothing and containing the costs of our transition to a clean energy economy. Environmental Defense Fund urges CARB to weigh recommendations of these two groups for guidance on limiting offsets.

### a. USCAP

Within the USCAP Blueprint is a valuable discussion on the tradeoff between generous use of offsets, especially in the near term, and the establishment of a stringent cap. Environmental Defense Fund looks to a stringent economy-wide cap on emissions as the first essential step toward avoiding the worst effects of global warming. To allay concerns that aggressive caps will

result in economic hardships, Environmental Defense Fund recommends allowing regulated entities to use high-quality, verified offsets to help meet their compliance obligations.

Within the USCAP Blueprint, a discussion of offsets as a core tool for achieving several cost containment objectives identifies the following benefits of using offsets:

- Protect the economy while allowing a long-term price signal that stimulates the development and deployment of new technologies;
- Drive investments in energy efficiency;
- Maintain the integrity of the cap for each compliance period, and
- Reduce atmospheric concentrations of greenhouse gases.<sup>9</sup>

In relation to the use of offsets to control allowance prices, inspire innovation, and promote *in situ* actions by large emissions sources, the USCAP Blueprint recommended an overall offset limit of 2 billion tons and a market construct that ensures allowance prices to be sustained above minimal levels. The Blueprint suggests an initial allowance price of no less than \$10 per ton rising at rates slightly higher than inflation. Further, the Blueprint recommends that “annual limits on offsets be implemented in a manner that ensures easy and efficient access to offsets by all covered firms while providing flexibility and limiting the potential for speculation by, for example, using the ratio of a given year’s offset limit to the cap on emissions in that year to define each covered firm’s limit on the use of offsets for compliance purposes.” Within this construct, the Blueprint strives to find the balance between allowance scarcity and generous use of offsets such that allowance prices send strong, long-term signals to investors without overburdening regulated entities with unnecessarily high compliance costs or threatening to erode public support due to high program costs.

#### **b. California Market Advisory Committee**

Similar to the USCAP, the MAC acknowledges the role that offsets will play in achieving AB32 emissions reduction goals in a cost-minimizing manner. In addition, the MAC acknowledged the balance needed between public confidence in the overall program and achieving reductions at lowest possible cost. Therefore, within the MAC report were recommendations that California's cap-and-trade offset program should:

- Ensure the environmental integrity of offset projects,
- Obtain emission reductions from and drive innovation in sectors of the economy that are difficult to include initially in a regulatory program, and
- Provide a model for other programs.<sup>10</sup>

In response to the high value that offsets bring for cost-containment purposes, the final MAC report recommended that offsets be limited by neither quantity nor jurisdiction.<sup>11</sup>

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<sup>9</sup> USCAP Blueprint, page 8.

<sup>10</sup> MAC Report, Page 62.

<sup>11</sup> MAC Report, page 68, "The sense of the Committee is that California should reject geographic or quantitative limitations on offset credits so as to maximize the opportunity to reduce GHG emissions at the lowest cost."

### **c. Environmental Defense Fund General Views on Offsets**

Environmental Defense Fund, like the USCAP and MAC, recommends a framework that allows for the broad use of offsets within greenhouse gas emissions cap and trade programs. Broad inclusion of offset projects will increase the likelihood that low-cost projects will be identified and implemented to provide valuable program cost containment and generate local emissions reductions.

Similar to the MAC, Environmental Defense Fund observes that an offsets program will be successful when it inspires public confidence, ensures environmental integrity, and minimizes administrative costs.<sup>12</sup> In particular, to create a successful program in California, CARB's consideration of localized impacts (from offsets projects themselves or from avoided reductions by major sources) may necessitate limiting the availability of offsets for meeting AB32 reduction requirements. Within this construct to obtain local benefits, we recommend guiding offsets toward the types (i.e., projects that achieve co-pollutant reductions) and locations (i.e., communities already suffering a disproportionate impact) desired by society. Creating local benefits in an offsets program reduces the impetus to limit offsets quantitatively.<sup>13</sup>

In addition to creating local benefits, Environmental Defense Fund believes strongly that the use of offsets should not result in backsliding on air quality goals, particularly in already disadvantaged communities, as this would clearly violate the community protections language in AB32. While we consider the need to ensure air quality protections, we also observe that extensive use of offsets contributes to minimizing economic harm to low-income communities that may result from price increases for GHG-intensive goods and services. There is no strong reason to believe that the lowest cost offsets will be identified first, so quantitative limits are likely to raise the cost of meeting GHG reduction goals by impairing the development of the most cost-effective offsets projects.

Environmental Defense Fund looks forward to continuing our participation in the ongoing discussion on qualitative standards for offsets. However, we must take this opportunity to strongly agree with both the MAC and USCAP that no offsets should be credited for use in a domestic cap-and-trade program (i.e. AB32) unless they meet rigorous standards for quality. While there may be unresolved questions surrounding the justification for limiting offsets by quantity, there is little disagreement that only high quality offsets should be allowed in regulatory cap-and-trade programs. It is also of paramount importance that quality criteria be consistent across jurisdictions intending to link cap-and-trade programs. Building upon this consensus, California can and should play a leading role in defining and demonstrating an institutional structure that produces offsets of only the highest quality. In this respect, Environmental Defense Fund does not support the availability of project credits from large emitting countries that have not committed to significantly reducing their overall greenhouse gas emissions.

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<sup>12</sup> MAC Report, page 63, "A successful set of standards will generate public confidence, ensure environmental integrity, and minimize administrative costs."

<sup>13</sup> The MAC acknowledges concerns that the co-benefits of greenhouse gas reductions are important for California, especially so in urban areas with relatively high pollution. But rather than calling for limiting offsets spatially or quantitatively, the MAC recommends "tighter restrictions on emissions of the relevant local pollutants (as opposed to greenhouse gases) is the most direct way to address this problem. Pg. 65."

Although Environmental Defense Fund generally concurs with the MAC recommendation that offsets be limited by neither quantity nor jurisdiction,<sup>14</sup> we are concerned that inclusion of credits from the current CDM or Joint Implementation regime under the Kyoto Protocol might lead to perverse incentives for large emitting countries without caps to continue increasing their emissions. For this reason, Environmental Defense Fund recommends that only high quality, verified emission reduction projects from large emitting jurisdictions that have committed to controlling their emissions (e.g. through an emissions cap) should be considered as potential offsets credits in the California market. This requirement largely excludes CDM and JI credits in the prevailing European cap-and-trade program.

We also agree with the MAC that Memorandums of Agreement, or some other enforceable commitment, is needed before the California program accepts offsets credits from other jurisdictions. These agreements, like those facilitated by the Governor at the Governor's Global Climate Summit in late 2008, provide the framework to ensure certainty in emissions reductions achieved outside of California's borders. Ultimately, Environmental Defense Fund sees the long term benefit of embracing offsets from other jurisdictions as two-fold: (1) demonstrating (and measuring) emissions from hard to reach sectors or places, and (2) developing monitoring and verification systems that are necessary precursors to inclusion as a capped sector in a cap-and-trade program .

While we do not believe that CDM and JI credits, under the current system of verification and originating in jurisdictions that have yet to commit to caps, should be qualified offsets for the California cap-and-trade program, we do agree with the MAC that, "Allowing offsets from outside the state, in particular, will ensure that global emission reductions are obtained at the lowest possible cost and may also encourage other states to follow California's lead on climate change".<sup>15</sup>

## **2. Answers to specific questions posed by CARB**

### **a. How to interpret the Scoping Plan offsets limit of "49% of reductions"?**

Given that a significant benefit of high quality offsets is a reduction in overall program costs, we encourage an interpretation of the 49% limit in a manner that broadly allows offsets into AB32, thereby avoiding undue economic harm from excessively high allowance prices while also encouraging technology transformation. In so doing, we recommend CARB counterbalance maximizing the amount of offsets under various interpretations of 49% with the importance of limiting the potential for speculation and creating transparent accounting rules and calculation methods. Steadfast transparency and ease of understanding will generate public confidence and reduce the chance of regulatory delays which can undermine the entire AB32 program.

Due to uncertain emissions forecasts and the need for overall transparency, Environmental Defense Fund cautions against using hypothetical business-as-usual emissions calculations as the metric to determine either the amount of allowable offsets or how they can be used by regulated entities under the term "49% of reductions." Evaluating reductions with respect to business-as-usual (BAU) is an inherently uncertain exercise and can lead to both uncertain compliance obligations and difficult market implementation. Further, since economy-scale estimates of

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<sup>14</sup>MAC Report, page 68, "The sense of the Committee is that California should reject geographic or quantitative limitations on offset credits so as to maximize the opportunity to reduce GHG emissions at the lowest cost."

<sup>15</sup>MAC Report, page 64.

avoided emissions are very difficult to defend, offsets limits based on BAU forecasts may create regulatory delays if ex-post administrative review becomes necessary.

As an alternative to BAU calculations to determine the 49% limit, Environmental Defense Fund recommends CARB evaluate the limit in terms of an economy wide compliance obligation calculated by the difference between the levels of the cap at the beginning (or immediately preceding) and the end of each compliance period. This will ensure that each compliance period delivers at least half of the reductions expected through direct emissions reductions in entities under the California (or WCI) cap. For example, as shown in Slides 1 and 2 on page 10, if the emissions of entities covered by the cap at the start of the first compliance period are 30 million tons greater than the emissions cap at the conclusion of the compliance period, an amount just under 15 million tons of reductions (i.e., 49% of 30 million tons) would be able to be achieved through offsets.

In addition to offering the preceding example for interpretation of the 49% limit in the first compliance period, it is also important to understand how successive compliance period rules will allow entities to use offsets. With this said, placing quantitative offsets limits on prior compliance period reductions may cause unintended consequences like attempts at market manipulation, perverse incentives or lower offsets limits. For example, as shown in Slides 3 and 4 on page 11, if an entity is allowed to utilize offsets for 49% of its required reductions in the first period, and in the second period is only allowed to use an offsets amount equal to 49% of the difference between the first compliance period cap and the second compliance period cap, that entity will be allowed to use an amount that is far less than 49% of the total reductions caused by the AB32 cap. Put another way, CARB should consider allowing entities to use offsets to meet 49% of the emissions reductions compounded across all compliance periods since the start of the program, as shown in Slides 3 and 5 on pages 11 and 12.

**b. Should the limit be applied based on the use of offsets, the supply, or a hybrid of both? Are there other options?**

As a starting point, Environmental Defense Fund recommends CARB look to the USCAP Blueprint and create an offsets limit that is based on the total amount available for use by covered entities. This method ensures flexibility and limits the potential for speculation.

An example given in the USCAP Blueprint to create a use limit is to define each covered firm's offsets limit by the ratio of the given year's economy wide offsets limit and the emissions cap in that year. If this were used in California, a 49% offsets limit could amount to each entity having a 49% limit on the amount of offsets they could use to meet their compliance obligation. That is, under the USCAP scenario, CARB could base the allowable amount of offsets used by each entity on an evaluation of the difference between their theoretical individual emissions cap at the start of the compliance period and the allowance obligation at the end of the compliance period. Once this difference is characterized, the allowable offsets quantity would be translated into a quantity relative to their particular compliance obligation.

In support of a limit based on use rather than other metrics, Environmental Defense Fund agrees with CARB staff that supply limits will suppress the development of offsets projects, thereby undermining the search for and achievement of reductions in sectors outside of the cap-and-trade program. However, similar to supply limits, we also observe that usage limits pertaining to capped entities will suppress demand for offsets, which in turn will undermine investments in

offsets projects. Compared to supply limits though, use limits offer a more transparent approach to constructing an economy wide offsets limit and appear to be most easily defended when confronted by claims that the agency determination was arbitrary. Furthermore, when compared to an overall supply limit, a usage limit based on compliance obligation would do less to hinder the development of a large pool of offsets projects.

Notwithstanding the discussion above, EDF maintains overall concerns about the role of quantitative offsets limits in depressing the offsets market, undermining investment in non-capped sectors, and diminishing the utility of offsets for cost containment and asserting a stringent cap.

**c. How should the 49% limit be applied across jurisdictions in the Western Climate Initiative?**

Environmental Defense Fund recommends that CARB work with the WCI partners to send a clear message to offsets providers that high quality credits are important, in demand, and welcomed. If California's or other WCI member state's offsets limitations (to the extent those limits exist) significantly reduce the opportunity for offsets credits to be used for compliance obligations, or to flow from state to state, the desirable goal of linking programs can be severely impaired.

CARB should work with the WCI to implement a unified offsets program, focused primarily on rigorous qualitative criteria that is consistent across jurisdictions and that allows for broad use of offsets throughout the WCI region. A unified approach will engender the myriad of benefits described in the general discussion above.

Offsets are anticipated to provide important cost-containment benefits. If limits on offsets in California are not harmonized with other linked jurisdictions, a likely consequence will be that other jurisdictions will have lower allowance prices than in California. Furthermore, some of those low-priced allowances outside of California may be from offsets projects within California. This is likely to raise a political red flag amongst regulated entities, unless they can simply acquire out-of-state allowances for complying with AB32. CARB should therefore work with the WCI partners to avoid these political issues since they may tend to create administrative delay after the market is up and running.

To the extent that regulated entities have compliance obligations in multiple WCI jurisdictions, (i.e. utilities, oil refiners, large manufacturing firms, etc.) different offsets limits in different WCI jurisdictions may create competitiveness issues and result in allowance or emissions "shuffling" from one WCI jurisdiction to another.

As documented in existing cap-and-trade programs, such as the sulfur dioxide program created under the 1990 Clean Air Act, the majority of emissions reduction credit transfers are likely to take place within individual companies that own multiple facilities within the regulated area.<sup>16</sup> CARB should therefore seek to minimize shuffling within businesses in multiple WCI partner states.

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<sup>16</sup> Ellerman, D. et al., *Markets for Clean Air: The U.S. Acid Rain Program*. New York: Cambridge University Press, (2000).

**d. How should the limit be divided among compliance periods? Is it more critical to have a greater supply of offsets early in the program or later in the program?**

Although the staff presentation on this issue identified several core issues, Environmental Defense Fund believes other issues merit mention as well.

In general, Environmental Defense Fund views offsets as an important tool for managing compliance costs, especially where capped sources' reductions activities take awhile to be developed or to be implemented at full scale. A paramount feature of the flexibility afforded by cap-and-trade is to allow regulated parties to choose what investments make the most sense for their business. This choice should include when and where to invest in reductions or allowance purchases (from offsets or other regulated entities) as long as these decisions do not violate the community protections requirements of AB32.

In addition to current cost containment, offsets may be an important future cost containment tool as the stringency of the cap increases over time. However, while we may look to offsets in some fashion to help our economy transition to lower emissions, they should be seen as a bridge tool that generates needed reductions while increasing emissions accounting and setting the stage for wider inclusion of sources within the cap-and-trade program. As more sources are included under the cap and the trajectory towards a low carbon economy steepens, the need for offsets may diminish because more reductions will be achieved through direct reductions efforts and new technology.

On the issue of allowing more or less offsets in the near or long term, EDF concurs with the MAC recommendation that, to the extent that quantitative or geographic limits are imposed on offsets for use in California's cap-and-trade program, it should be done so with "a view to gradual relaxation or removal [of these constraints] once other policy considerations have been adequately addressed."<sup>17</sup> This position supports the recommendation offered in response to the question above on interpreting the 49% limit: that CARB should consider allowing entities to use offsets to meet 49% of the emissions reductions compounded across all compliance periods since the start of the program, rather than limiting it to the difference between compliance periods (see attached slides 3 and 5 on pages 11 and 12).

USCAP recognizes the important role that offsets can play in maintaining cost control as well as allowance price floors. Like the MAC, USCAP recognizes the importance of a long term price signal but suggests using an allowance reserve pool for this purpose.

On the issue of how to change the offsets limit over time within a staggered compliance period structure, Environmental Defense Fund sees that CARB may need to avoid translating allowable offset percentages into economy wide numerical limits on the amount of allowable offsets. Further, for ease of enforcement, equity and transparency, CARB may also need to consider making any adjustments to the allowable offsets limit for all overlapping compliance periods at the same time. By utilizing an offsets percentage basis and treating all entities the same in terms of allowable offset use, CARB can retain flexibility to change the market system without impairing overall transparency.

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<sup>17</sup> MAC Report, page 65.

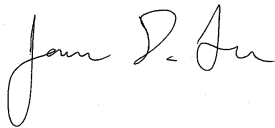
### 3. Conclusion

In summary, similar to USCAP Blueprint and the MAC recommendations, Environmental Defense Fund believes the most cost-effective cap-and-trade design will quantitatively limit offsets only as needed to buoy allowance prices. As with the USCAP framework, Environmental Defense Fund recommends that CARB focus its offsets policy on the need to balance cost containment and community benefits, manage allowance price volatility, ensure a long term carbon price signal, avoid adverse signals to high-quality offsets providers (where possible), and assert the primacy of quality over quantity as a boundary-setting metric.

While a limit on offsets availability may achieve these goals, CARB should be continually mindful of the range of benefits that offsets bring while also balancing the potential for offsets to aid California's transition to a low carbon future.

Thank you for your consideration of our recommendations.

Sincerely,

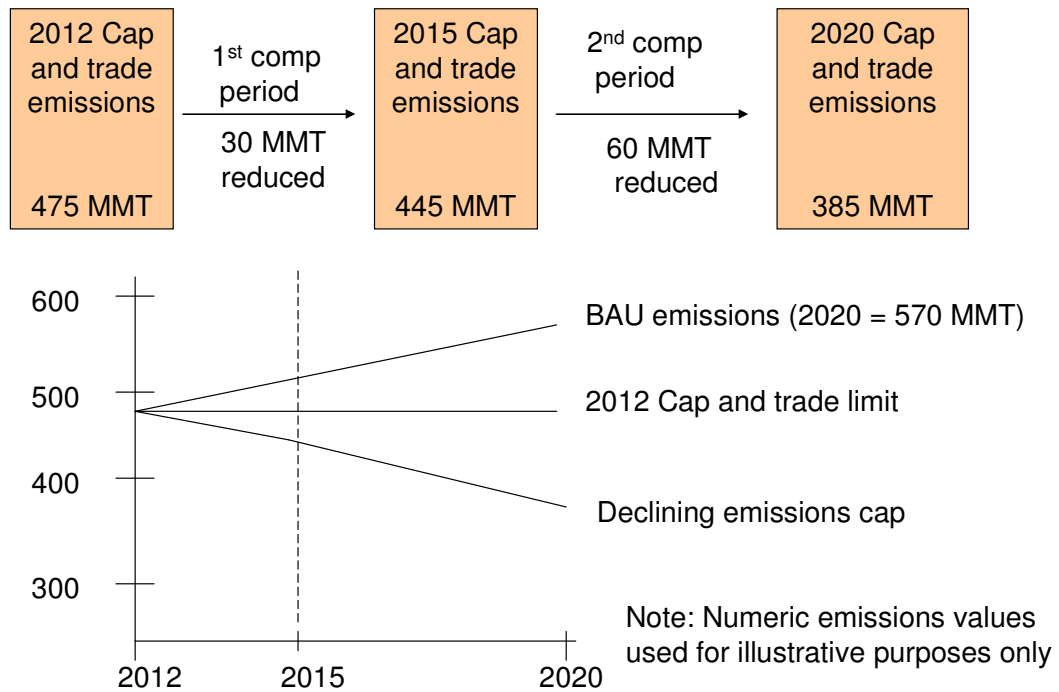
A handwritten signature in black ink, appearing to read "James Fine".

James Fine, PhD  
Economist  
Environmental Defense Fund

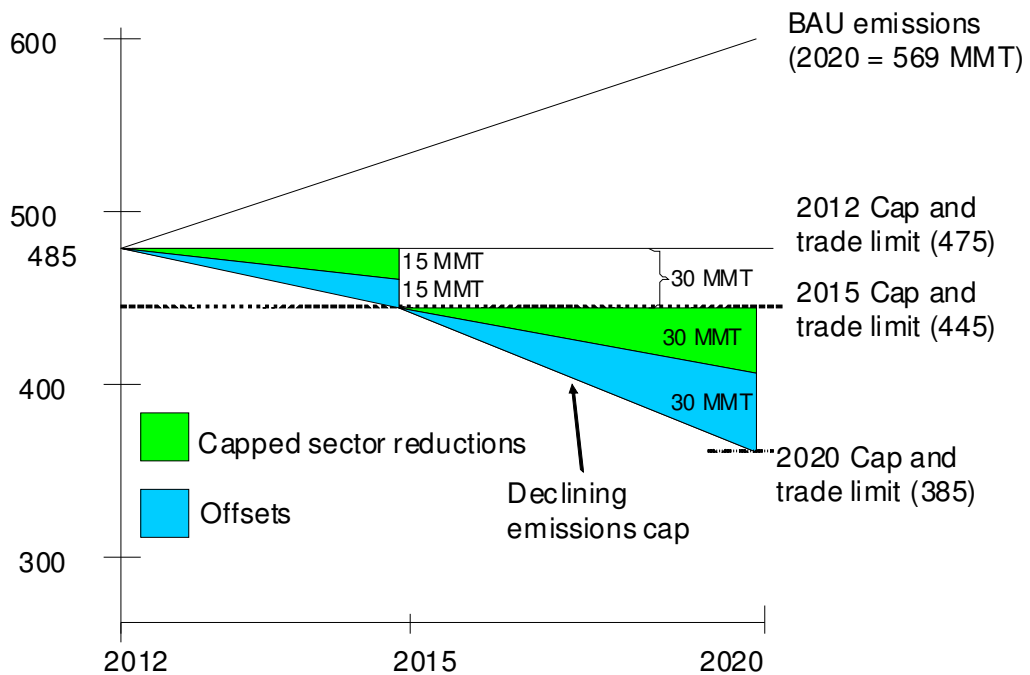
A handwritten signature in black ink, appearing to read "Tim O'Connor".

Timothy O'Connor  
Attorney, Climate Change Policy Analyst  
Environmental Defense Fund

## Slide 1 - AB32 Cap-and-Trade Emissions Reductions



## Slide 2 - AB32 Cap-and-Trade Emissions Reductions



## Slide 3 – Calculating AB32 Cap-and-Trade Offsets Limit Using 2 Scenarios

Compliance Period 1 - Emissions reductions = 30 MMT

(Approx 15 MMT direct)

(Approx 15 MMT offsets allowed)

Compliance Period 2 - Emissions reductions = 60 MMT

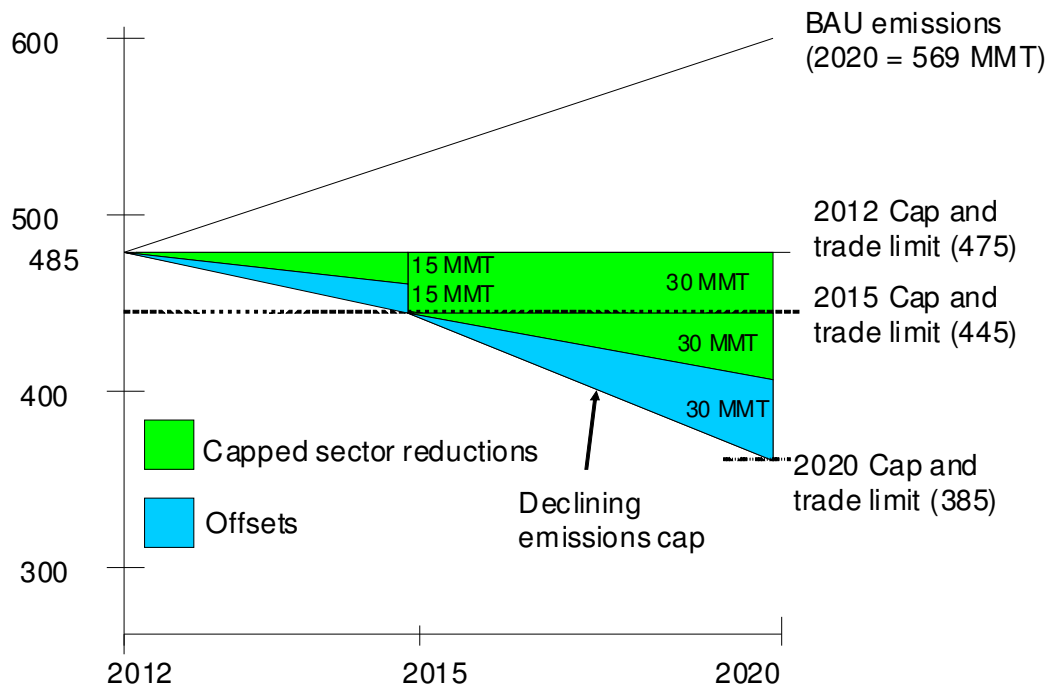
### Limit based on individual compliance periods

- In 2020 – total reductions from 2012 = 90 MMT
  - Approx 30 MMT direct reductions
  - Approx 30 MMT offsets allowed
  - Approx 30 MMT reductions carried over from Compliance period 1, assumed direct reductions
- Total offset limit =  $30/90 = 33\%$

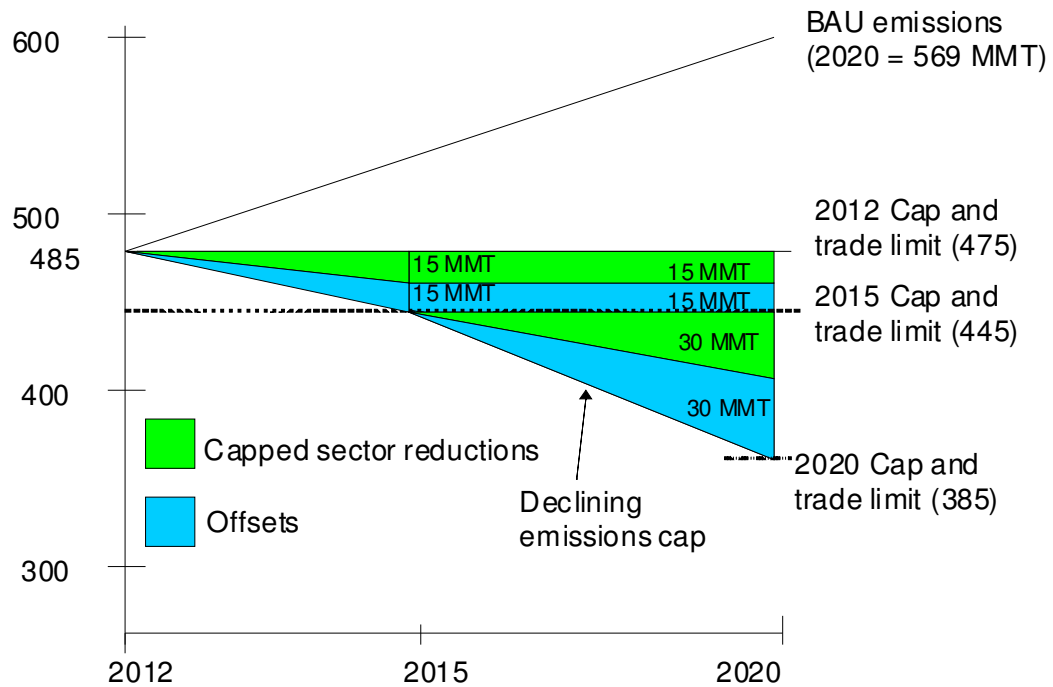
### Limit based on compounded emissions reductions

- In 2020 – total reductions from 2012 = 90 MMT
  - Approx 45 MMT direct reductions
  - Approx 45 MMT offsets allowed
- Total offset limit – Approx 49%

## Slide 4 – Calculating AB32 Cap-and-Trade Offsets Limit Based on Individual Compliance Periods



## Slide 5 – Calculating AB32 Cap-and-Trade Offsets Limit Based on Compounding Compliance Periods



## Attachment 2 of 2: Coalition Letter about Benefits of Offsets, April 30, 2009



### **Statement of recognition regarding the benefits of high-quality offsets within California cap-and-trade program**

A transition to a low carbon economy, both in California and elsewhere, is a necessary step to combat climate change. As recommended by innumerable experts across the world, for this economy-wide transition to be successful, the strategies employed must be aimed both at obtaining rapid environmental benefits (e.g. emissions reductions, technology innovation) while containing overall costs. Cap-and-trade emission reduction programs are an effective and proven tool for achieving these dual aims because they contain embedded incentives to obtain the maximum technologically feasible and cost effective emissions reduction opportunities. We believe that an essential part of a well-designed cap and trade program includes the ability of regulated parties to use high-quality offsets to meet a portion of their compliance obligation. The use of high-quality offsets within cap-and-trade programs is an essential component that advances the goals of the overall program while also accelerating other critical economic and environmental public benefits.

### **Offsets provide effective greenhouse gas emission reductions that can lower the cost of a transition to a low carbon economy felt by businesses and individuals**

Offsets are comprised of emissions reductions from projects occurring in sectors outside of a GHG emissions cap, creating opportunities and benefits for businesses and entrepreneurs both outside and within the cap. Outside of the cap, offsets reward the deployment of technologies and methods that reduce emissions and facilitate investment in emissions reduction practices that would not have occurred otherwise. These practices may lead to the development of monitoring and verification systems necessary to eventually include some new sectors within the cap. Further, as a result of inspiring investment activity to reduce emissions, offsets have the potential to increase overall economic output and can contain the cost of complying with GHG reduction goals, thus reducing costs that may otherwise be passed onto consumers. Studies by US EPA and others have shown that broad use of offsets dramatically reduces the cost of achieving both long and short term emission reduction goals.

Within the cap, offsets enable regulated businesses to invest in low-cost reductions to meet immediate reduction requirements. When coupled with an expectation of increased stringency of the future cap, this ability to find low cost reductions affords regulated parties the opportunity to plan and implement long-term, onsite emissions reductions to meet future compliance obligations. We believe that the use of offsets may be of particular value to states such as California where the very efficient use of energy and the high proportion of emissions from the transportation sector means that fewer low cost emission reduction opportunities may be available in the short to mid-term.

## **Offset projects can provide multiple environmental benefits to the public**

In addition to economic benefits, offsets can provide significant environmental benefits to the public, including protection and enhancement of water and air quality, recreation, local economies and employment, and fish and wildlife habitat. Specific examples of projects that generate these benefits include:

- Projects that conserve or restore forests can restore and protect fish and wildlife habitat, recreation, and local timber economies. In particular, projects along watersheds also foster and protect clean drinking water, as they act as natural filtration and cooling systems to maintain water quality.
- In urban settings, forest projects not only reduce GHGs through carbon uptake, but they can also foster energy efficiency by providing shade to buildings and houses and reducing pollution through natural air and water filtration.
- In agricultural settings, projects to improve farming practices can reduce the need for fertilizer and water use, thereby saving farmers money, reducing harmful run-off that kills fish and degrades aquatic habitat, and reducing air pollution related to fertilizer over-application.
- Projects that reduce transportation and stationary fuel use, such as truck stop electrification, decrease exhaust on streets, in ports and at rest stops, and improve ambient air quality by reducing criteria and toxic air pollution.

We look forward to working with ARB and other stakeholders to find ways to accelerate work on quality offset projects. We also hope that the availability of and standards for quality offsets will continue to be a key consideration of a successful AB 32 program. We offer our continued support to help develop sound offset policy for California.

Thank you,

The Nature Conservancy

Environmental Defense Fund

BP America, Inc

Pacific Gas & Electric Company